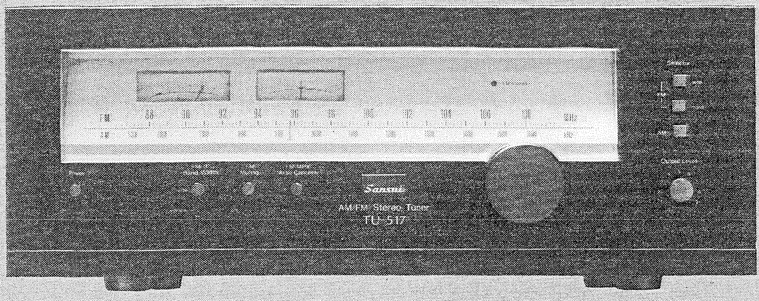
SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-517



Sansui

SANSUI ELECTRIC CO., LTD.

SPECIFICATIONS

FM Section

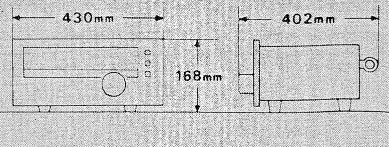
Tuning range	88 to 108 MHz
Usable sensitivity	
Mono IHF	9.8 dBf (1.7 μV: T100)
DIN	1.0 μV
Stereo IHF	19.0 dBf (4.9 μV)
50 dB Quieting sensitivity	
Mono	12.5 dBf (2.24 μV)
Stereo	34 dBf (27.5 μV)
Signal to noise ratio at 65 dBf	
Mono	82 dB
Stereo	78 dB
Distortion (at 65 dBf)	
Mono: Wide	less than 0.06 % at 100 Hz
	less than 0.06 % at 1,000 Hz
	less than 0.08 % at 6,000 Hz
Narrow	less than 0.15 % at 100 Hz
	less than 0.12 % at 1,000 Hz
	less than 0.18 % at 6,000 Hz
Stereo: Wide	less than 0.1 % at 100 Hz
	less than 0.07 % at 1,000 Hz
	less than 0.1 % at 6,000 Hz
Narrow	less than 0.21 % at 100 Hz
	less than 0.15 % at 1,000 Hz
	less than 0.2 % at 6,000 Hz
Adjacent channel selectivity (at 200 kHz)	
Wide	3.5 dB
Narrow	8.0 dB
Alternate channel selectivity (at 400 kHz)	
Wide	50 dB
Narrow	80 dB
Capture ratio	
Wide	1.0 dB
Narrow	1.5 dB
Image response ratio	85 dB (at 98 MHz)
Spurious response ratio	90 dB (at 98 MHz)
Stereo separation	
Wide	45 dB at 100 Hz
	48 dB at 1,000 Hz
	38 dB at 10,000 Hz
	36 dB at 30 ~ 15,000 Hz
Frequency response	30 to 15,000 Hz +0.2 dB −1.0 dB
Antenna input impedance	300 ohms balanced
	75 ohms unbalanced

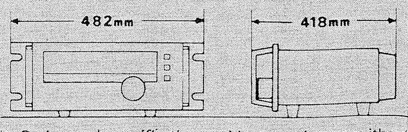
AM Section

Tuning range	530 to 1,600 kHz
Usable sensitivity (Bar antenna)	47 dB/m (220 μV/m)
Selectivity (±10 kHz)	35 dB
Signal to noise ratio	52 dB
Distortion at 80 dB/m	0.35 %

Others

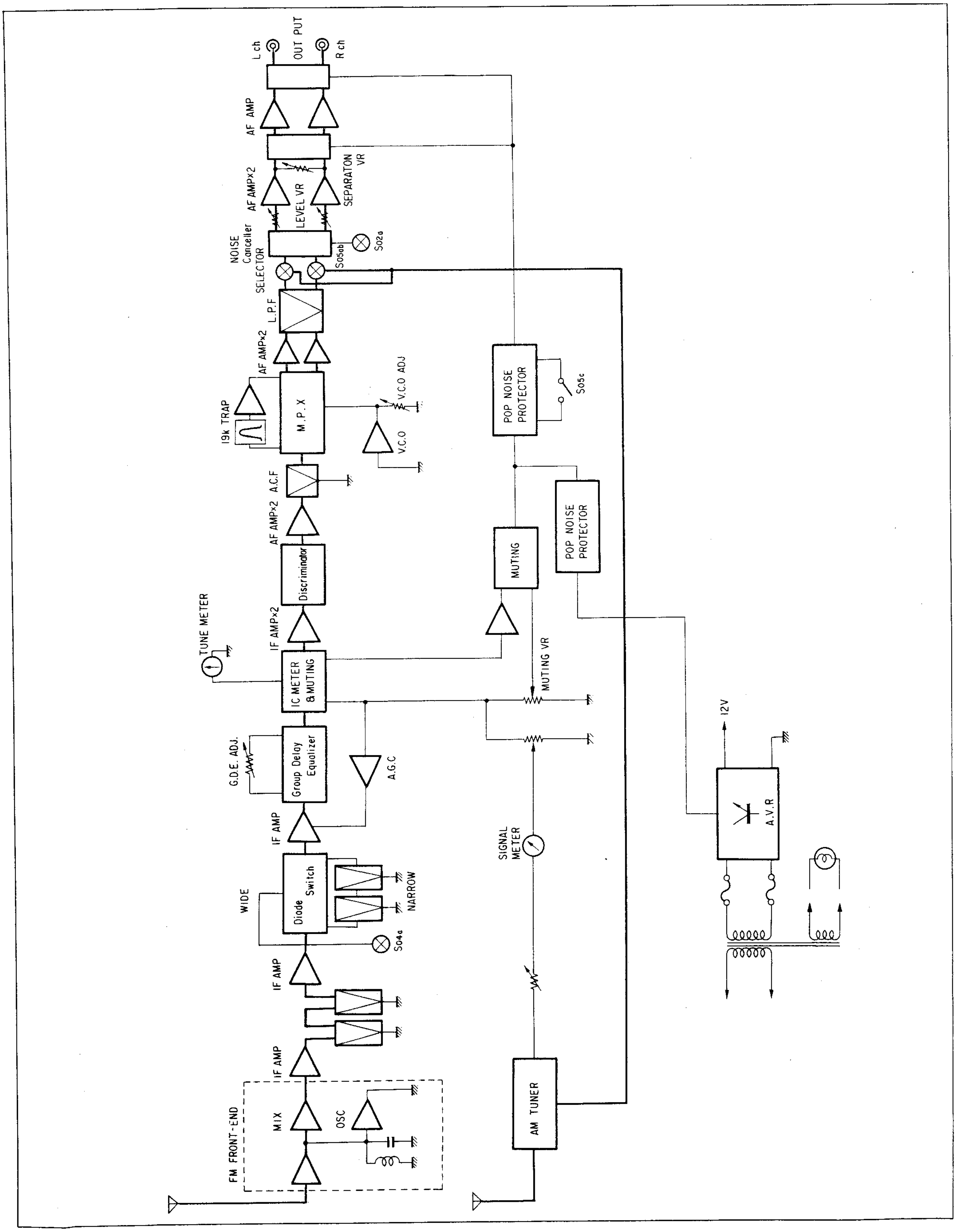
Output level	
Output	0 to 1 V
Power requirements	100, 120, 220, 240 V 50/60 Hz
	120 V 60 Hz
	(For U.S.A. & Canada only)
Power consumption	20 W
Weight	9.2 kg (20.3 lbs) net
	11.0 kg (24.3 lbs) packed





* Design and specifications subject to change without notice for improvements.

1. BLOCK DIAGRAM

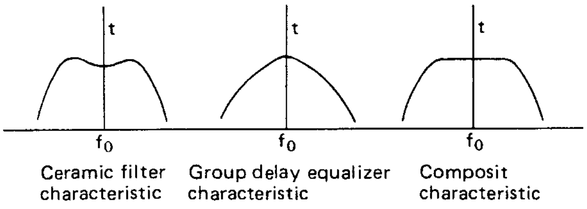

FM FRONT-END
MIX
OSC
IF AMP
IF AMP
WIDE
Diode Switch
NARROW
S04a
IF AMP
G.D.E. ADJ.
Group Delay Equalizer
A.G.C
TUNE METER
IC METER & MUTING
IF AMP×2
Discriminator
AF AMP×2
A.C.F
19k TRAP
M.P.X
V.C.O ADJ
V.C.O
AF AMP×2
L.P.F
SELECTOR
NOISE Canceller
S05ab
S02a
LEVEL VR
AF AMP×2
SEPARATON VR
AF AMP
L ch
OUT PUT
R ch
POP NOISE PROTECTOR
S05c
MUTING
POP NOISE PROTECTOR
MUTING VR
SIGNAL METER
AM TUNER
12V
A.V.R

2. ADVANTAGES

1. Group Delay Equalizer (FM. IF Section)

In the IF amplification stage of model TU-517 group delay equalizer and ceramic filter of distinguished characteristics are employed for the purpose of obtaining excellent-group delay characteristic. Generally, characteristics of both selectivity and group delay are inversely related and hard to be compatible.
The group delay equalizer (Sansui patent) used in TU-517 is provided to improve the group delay characteristic without sacrifieing the selectivity in spite of its characteristic being inversely related to group delay characteristic of ceramic filter as shown in Fig. 1. Consequently, group delay characteristic is improved without changing selectivity characteristic after compounded both characteristics.

Fig. 1

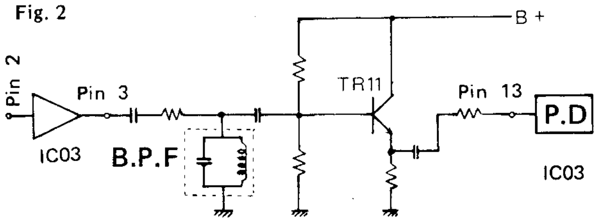


Ceramic filter characteristic
Group delay equalizer characteristic
Composit characteristic

2. 19 kHz Trap (FM. MPX Section)

This circuit is furnished to prevent phase jitter of pilot signal which is occured by main signal. As shown in Fig. 2, the B.P.F(Band-pass filter). is inserted between composit output and phase detector, which allows to pass the 19 kHz pilot signal. This procedure makes possible to eliminate beat noise of high frequency modulation signal (main signal of 6～12 kHz) and to improve distortion remarkably.

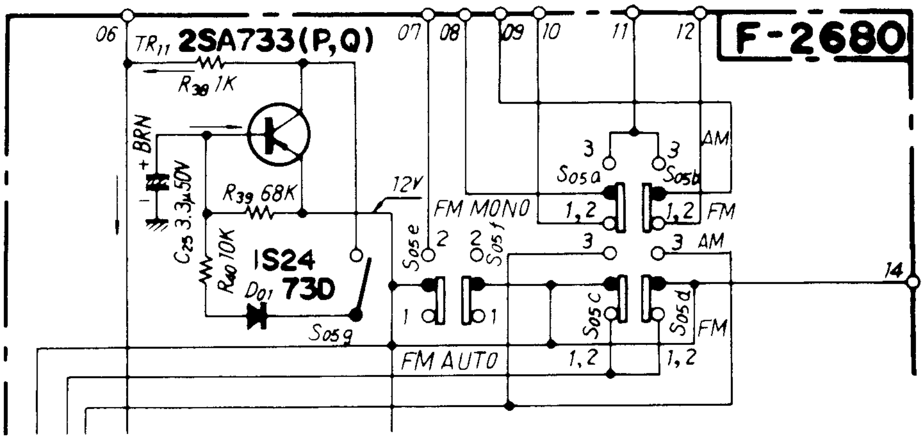
Fig. 2



•Operation of pop noise protection circuit (When occuring to switch the FM-AM selector)

- When switching the FM AM push-selector ON or OFF, the sub-switch S05g, turns "ON" for a moment.
- TR_{11} turns "ON" to be added a bias to its base.
- While the bias voltage is added to TR_{11}, the muting circuit functions.
- Resultly, the output voltage of this unit is 0V at the moment the selector being switched.

Fig. 3



3. ADJUSTMENTS (See the Top View on Page 8)

1. FM Adjustment

Note:
1. Selector . . . . FM MONO
2. FM Muting Switch . . . . OFF
3. Connection . . Connect the output of genescope to TP through 100 pF ceramic capacitor.
4. Bandwidth . . . . Wide
5. Confirm the voltage, DC 11.5 ~ 12.5 V at tap of 08 on F-2681. If not, set VR01 on F-2681 to DC 12 V.

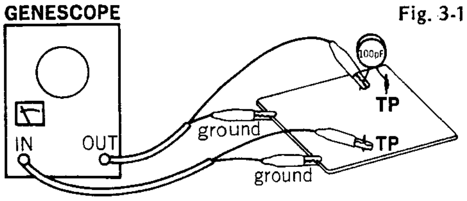
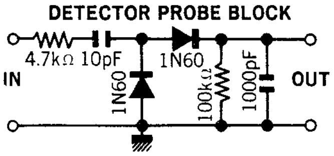
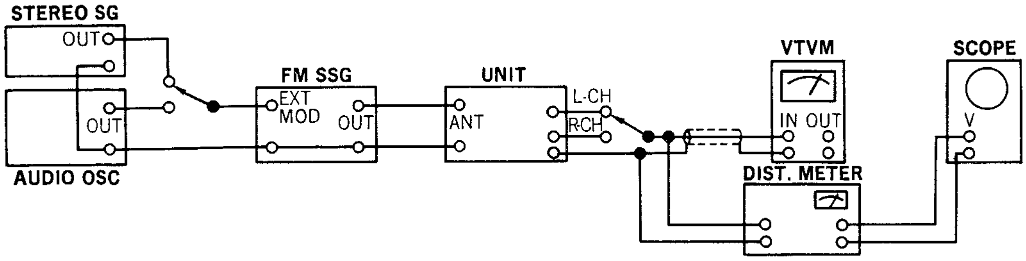
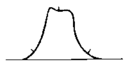
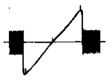
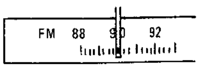
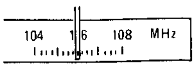
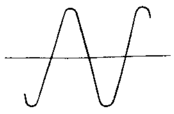
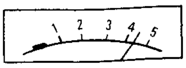
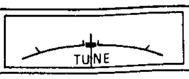

GENESCOPE
IN
OUT
100pF
TP
ground
TP
ground

Fig. 3-1


DETECTOR PROBE BLOCK
4.7kΩ 10pF
1N60
IN
1N60
100kΩ
1000pF
OUT


STEREO SG
OUT
OUT
AUDIO OSC
FM SSG
EXT MOD
OUT
UNIT
ANT
L-CH
RCH
VTVM
IN OUT
SCOPE
V
DIST. METER

(1) FM IF, RF Adjustment and Dial Calibration

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1.	IF Coil	Output 60 dB Genescope	TP01 F-2678	TP04 F-2678 Use Detector Probe	T01, T02 F-2678	Max. IF waveform	
2.	Discriminator Coil In case of using Genescope	Same as above	Same as above	TP01 F-2730	T01 F-2730	Steep linearity of S curve	
					T02 F-2730	Make symmetrical S curve	
	Discriminator Coil In case of using Dist meter	98 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	ANT terminal 300Ω	OUT L or R-CH Dist Meter	T01, T02 F-2730	Min THD	If not turn VR01 on F-2678 slightly
3.	90 MHz Dial Calibration	90 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	ANT terminal 300Ω	OUT L or R-CH VTVM & Scope	L04 F-2678	Max. Output	
	106 MHz Dial Calibration	106 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	TC04 F-2678	Same as above	 104 106 108 MHz
4.	90 MHz RF Adj	90 MHz ANT Input Minimum valve with sine wave 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02, L03 F-2678	Same as above	
	106 MHz RF Adj.	106 MHz ANT Input Minimum valve with sine wave 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	TC01, TC02, TC03 F-2678	Same as above	
5.	Signal Meter Volume	98 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	Signal Meter	VR02 F-2678	4.3 on Meter	
6.	Tune Meter	Same as above	Same as above	Tune Meter	T03 F-2678	Center on Meter	

(2) FM STEREO Adjustment

Note: Selector . . . . FM AUTO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	PLL VCO Adj.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) R (or L) Mode 1 kHz + Pilot (100% MOD) STEREO SG	ANT terminal 300Ω	Stereo indicator	VR04 F-2678	Light indicator	Adjust the VR within center of lighting level.
	PLL VCO Adj. In case of using Freq.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG (No MOD)	Same as above	TP06 F-2678 Use Freq. counter	VR04 F-2678	76 kHz ±150 Hz	
2.	Separation	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 kHz (9% MOD) R Mode 1 kHz + Pilot (100% MOD) STEREO SG	Same as above	OUT L-CH VTVM & Scope	VR02 F-2680	OUT −45 dB	Confirm separation L-CH → R-CH (−45 dB)
3.	Muting level	98 MHz ANT Input 20 dBf (14.8 dB) FM SSG Pilot 19 kHz (9% MOD) SUB 1 kHz + Pilot (100% MOD) STEREO SG	Same as above	Stereo indicator	VR03 F-2678	Muting level 20 dBf (14.8 dB) indicator turns ON.	FM MUTING Switch ON

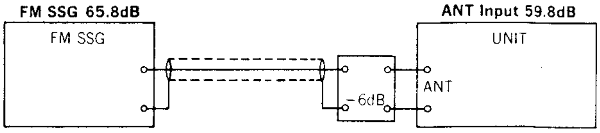
•NEW MEASUREMENT FOR FM.

Input signal level under the provision of IHFM-T-200, a new measurement method is indicated by available power ratio "dBf" To obtain approximate available power ratio "dBf", abstract 0.8 from attenuater indication of general FMSG (open load indication type); however, the former measurement, IHFM-T-100 is designated together too.

The way of modulation on IHFM-T-200 is shown below.

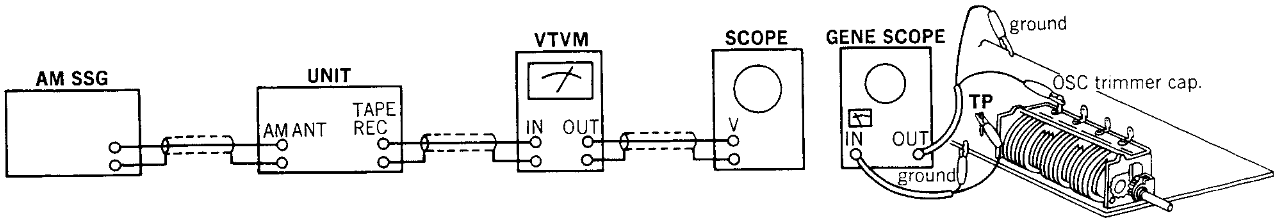
	modulation frequency	modulation mode	modulation fuctor
FM MONO	1000 Hz		100%
FM STEREO	1000 Hz	SUB	Pilot 9% Pilot + SUB 100%

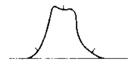
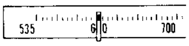
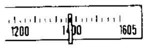
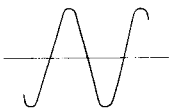
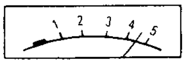
- The relation between the standard input 65 dBf of IHFM-T-200 and the former indication "dB" is shown below.



2. AM IF Adjustment & Dial Calibration

Note: 1. Selector . . . . AM 2. Confirm start point of dial pointer before alignment.



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Genescope Output 70 dB	TC06 F-2678	TP07 F-2678	CF05 LC02 F-2678	Max. IF waveform	
2.	600 kHz Dial Calibration	600 kHz ANT Input 60 dB 400 Hz (MOD 30%) AM SSG	AM ANT terminal	OUT L or R-CH VTVM & Scope	T04 F-2678	Max. Output	
	1400 kHz Dial Calibration	1400 kHz ANT Input 60 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC06 F-2678	Same as above	
3.	600 kHz RF Adj.	600 kHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	Bar Antenna L702	Same as above	
	1400 kHz RF Adj.	1400 kHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC05 F-2678	Same as above	
4.	Signal Meter volume	1000 kHz ANT Input 94 dB 400 Hz (MOD 30%) AM SSG	Same as above	Signal Meter	VR05 F-2678	4.5 on meter	

●Abbreviations

Equipment

AM FM Generator Oscilloscope	Genescope
AM Standard Signal Generator	AM SSG
FM Standard Signal Generator	FM SSG
FM Stereo Generator	Stereo SG
Oscilloscope	Scope
Audio Oscillator	Audio Osc.
Distortion Meter	Dist. Meter

Others

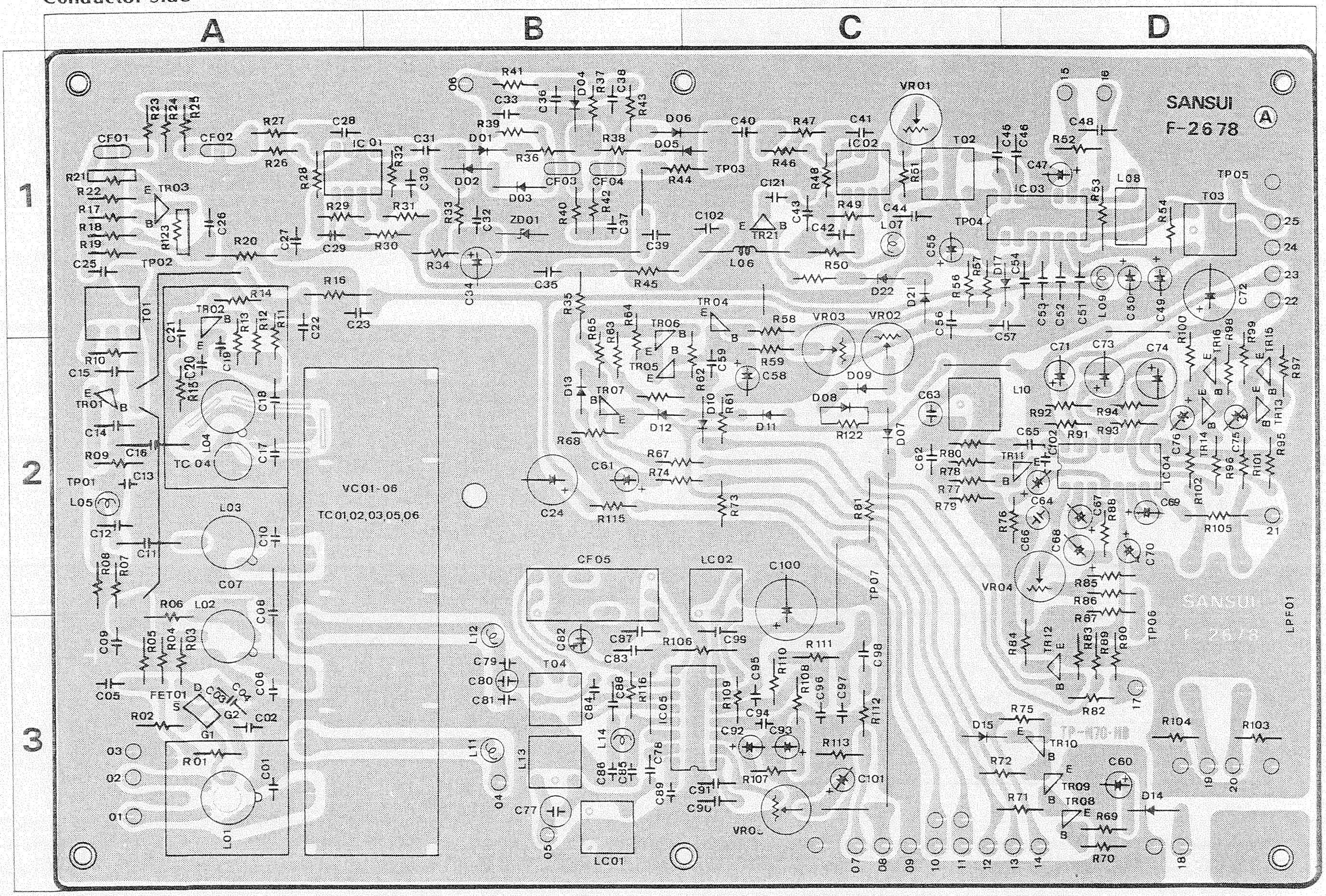
Antenna	ANT.
Modulation	MOD.
Total Harmonic Distortion	T.H.D.

4. PARTS LOCATION & PARTS LIST

Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors which was appended previously to each Sansui Manual.

1. F-2678 Tuner Circuit Board (Stock No. 7521771)

Conductor Side



Parts List

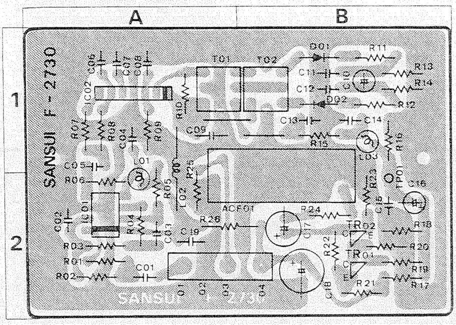
Parts No.	Stock No.	Description	Position
TR01, 02	0305801, 2	2SC1047 B, C	2A
TR03	0300282, 3	2SA628 E, F	1A
	0306340, 1	2SC1674 M, L	
TR04, 05, 06	0305731	2SC711 E, F	2, CB
TR07	0300510, 1	2SA733 P, Q	2B
TR08, 09	0305731, 2	2SC711 E, F	3D
TR10	0300510, 1	2SA733 P, Q Transistor	3D
TR11	0305951, 2	2SC945 P, Q	
TR12	0305731, 2	2SC711 E, F	3D
TR13, 14	0300510, 1	2SA733 P, Q	2D
TR15, 16	0306010, 1	2SC1222 (2) U, E	2D
TR21	0306342	2SC1674 K	2D
IC 01, 02	0360510	LA-1222	
IC 03	0360350	HA1137W IC	
IC 04	0360730	HA1196	2D
IC 05	0360390	HA1197	3B, C
FT01	0370131	3SK41 (1) L F.E.T.	
D 01	0311160	1S2473D	1B
D 02, 03	0310330, 1	1N60 Diode	1B
D 04, 05	0311160	1S2473D	1B, C
D 06	0310330, 1	1N60	1B, C
D 07, 09	0340120	VD1212 Varistor	2C
D 10	0311160	1S2473D Diode	2C
D 11	0340120	VD1212 Varistor	2C
D 12, 13	0311160	1S2473D Diode	2B
D 14	0310340	10D1 (1S2226) Diode	3D
D 15	0311160	1S2473D	3C

Parts No.	Stock No.	Description	Position
D 17	0340120	VD1212 Varistor	1D
D 21	0311160	1S2473D Diode	1C
D 22, 23	0340120	VD1212 Varistor	1C
ZD01	0315560	RD-6A N Zener Diode	1B
	0315770	EQA01-06S	
C 01	0669350	15 PF 50V	3A
C 04	0659015	2200 PF 50V C.C.	3A
C 06	0669350	15 PF 50V	3A
C 07	0659015	2200 PF 50V	2A
C 08	0679024	0.33 PF 500V Gimmick C	2, 3A
C 10	0669350	15 PF 50V C.C.	2A
C 11	0669507	7 PF 50V	2A
C 16	0679006	0.82 PF 500V Gimmick C	2A
C 17	0669355	20 PF 50V	2A
C 18, 19, 20	0669210	10 PF 50V C.C.	2A
C 37	0661150	15 PF 50V	1B
C 63	0629001	6800 PF 50V P.C.	2C
C 66	0629005	360 PF 50V	2D
C 67	0573159	1.5 µF 35WV E.C.	2D
C 69	0573228	0.22 µF 35WV	2D
C 79	0669415	15 PF 50V C.C.	3B
C 80	0620361	360 PF 50V P.C.	3B
C 81	0669415	15 PF 50V C.C.	3B
C 85, 86	0661150	15 PF 50V	3B
L 01	4200720	Antenna Coil	3A
L 02, 03	4210340	RF Coil	2, 3A
L 04	4220400	O.S.C. Coil	2A
L 05	4900140	1 µH Inductor	2A

Parts No.	Stock No.	Description	Position
L 06	4290011	Peaking Coil	1C
L 07	4900100	3.3 µH	1C
L 08	4290300	18 µH Inductor	1D
L 09	4900100	3.3 µH	1D
L 10	4240720, 1	MPX Coil	3B
L 11, 12	4900140	1 µH Inductor	3B
L 14	4900110	100 µH	3B
T 01, 02	4235930	IF Coil	2A, C
T 03	4235860	FM IF Coil	1D
T 04	4220650	O.S.C. Coil	3B
CF01 ~ 04	0910380	Ceramic Filter	1A, B
CF05	0910370	Ceramic Filter	2B
LC01, 02	4230620	IF Coil	3B, C
LF01	0910210	Low Pass Filter	
VR01	1035120	Volume 6.8K Ω B, Phase adj.	1C
VR02	1035110	Volume 47 kΩ B, FM meter	2C
VR03	1035190	Volume 100 KΩ B, FM muting	2C
VR04	1034250	Volume 4.7 KΩ B, V.C.O.	2D
VR05	1035110	Volume 4.7 KΩ B, AM meter	3C
VC01	1220260	Variable Capacitor	
TC04	1230090	Trimmer Capacitor	

2. F-2730 FM Discriminator Circuit Board (Stock No. 7521791)

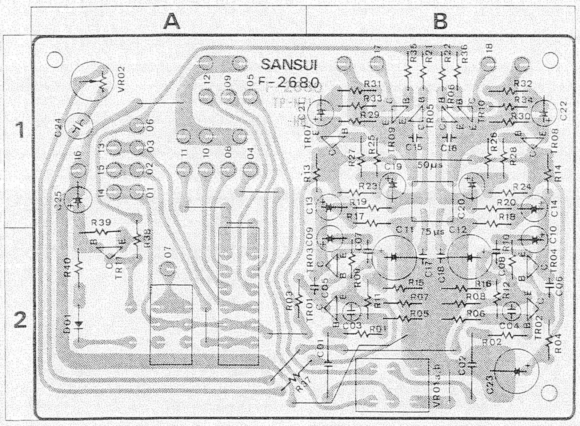
Conductor Side


A
B
1
2
SANSUI F-2730
SANSUI F-2730
TO1
TO2
DO1
DO2
LO1
LO2
LO3
TRO1
TRO2
TPO1
ICO1
ICO2
ACFO1

Parts No.	Stock No.	Description	Position
TR01	0300510, 1	2SA733 P, Q Transistor	2B
TR02	0306010, 1	2SC1222 (2) U, E	2B
IC 01	0360510	LA-1222 IC	2A
IC 02	0360540	µPC1163H	2A
D 01, 02	0311160	1S2473D Diode	1B
R 26	0191479	4.7 Ω ¼W F.R.	2A
L 01	4900100	3.3 µH Inductor	2A
L 02	4290011	Peaking Coil	1A
L 03	4900110	100 µH Inductor	1B
T 01	4236010	IF Coil	1A
T 02	4236020	IF Coil	1B
LC01	0910400	Adjucent Channel Filter	
	2410590	4P Pin Ass'y Type D	

3. F-2680 Selector SW & Muting Circuit Board (Stock No. 7596071)

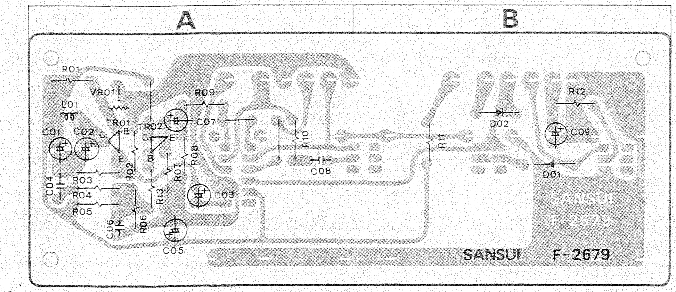
Conductor Side


A
B
1
2
SANSUI F-2680
VR02
VR01
TR11
50µs
75µs

Parts No.	Stock No.	Description	Position
TR01 ～04	0306010, 1	2SC1222 (2) U, E	2B
TR05, 06	0305952, 3	2SC945 P, K	1B
TR07, 08	0306010, 1	2SC1222 (2) U, E Transistor	1B
TR09, 10	0305952, 3	2SC945 P, K	1B
TR11	0300510, 1	2SA733 P, Q	2A
D 01	0311160	1S2473D Diode	2A
C 01, 02	0602109	1.0 µF 100WV M.C.	2B
C 03, 04	0620101	100 PF 50V P.C.	2B
C 05, 06	0661150	15 PF 50V C.C.	2B
C 07, 08	0661180	18 PF 50V	2B
VR01	1015250	2-ganged volume, 50 kΩ B output level	2B
VR02	1035350	Volume, 4.7 kΩ B separation	1A
S 05	1131440	Push Switch, selector	
S 06	1110270	Slide Switch, De-emphasis	

4. F-2679 Accessory SW & Calibration Circuit Board (Stock No. 7596061)

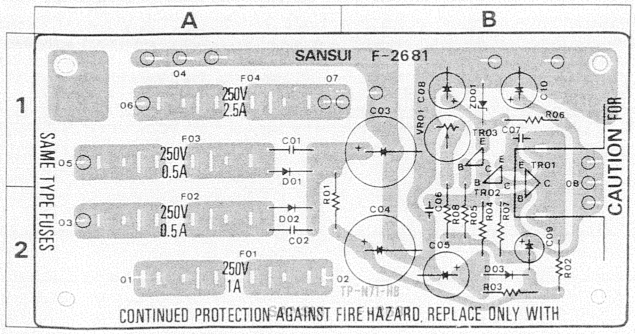
Conductor Side


A
B
SANSUI F-2679
SANSUI F-2679
VR01
LO1
TRO1
TRO2
DO1
DO2

Parts No.	Stock No.	Description	Position
D 01, 02	0311160	1S2473D Diode	B
R 12	0210680	68 Ω ½W N.I.R.	B
S 02 ～04	1171130	Lever Switch, Noise Canceller Muting Band Width	
	2410700	6 P Pin Ass'y Type F	

5. F-2681 Power Supply Circuit Board (Stock No. 7502751)

Conductor Side


A
B
1
2
SANSUI F-2681
F04
250V
2.5A
F03
250V
0.5A
F02
250V
0.5A
F01
250V
1A
SAME TYPE FUSES
CAUTION FOR
CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH
VR01
ZD01
TRO1
TRO2
TRO3

Parts No.	Stock No.	Description	Position
TR01	0308391 ～3	2SD313AL D, E, F Transistor	1, 2B
TR02, 03	0305731 ～3	2SC711 E, F, G	1B
D 01 ～03	0310340	10D1 (1S2226) Diode	1, 2AB
ZD01	0315770	EQA01-06S Zener Diode	1B
C 01, 02	0655103	10,000 PF 500V C.C.	1, 2A
C 06	0620471	470 PF 50V P.C.	1, 2A
R 01	0210100	10 Ω ½W N.I.R.	1, 2A
R 02	0191479	4.7 Ω ¼W F.R.	2B
VR01	1035110	Volume, 4.7 kΩ B DC Adj.	1B
F 02, 03	0432210	0.5A 250V AC Fuse	1, 2A
F 04	0432250	2.5A 250V AC Fuse	1A

5. OTHER PARTS

1. Front View

Parts List

Parts No.	Stock No.	Description
1 S 701	1171630	Lever Switch, power
	5326611	Knob, lever switch
2 S 04	1171130	Lever Switch, band width
	5326611	Knob, lever switch
3 S 03	1171130	Lever Switch, muting
	5326611	Knob, lever switch
4 S 02	1171130	Lever Switch, noise canceler
	5326611	Knob, lever switch
5	5066321	Bottom Plate
6	5318901	Knob, tuning
	7036510	Tuning unit
7	5507070	Leg

Parts No.	Stock No.	Description
8	5318850	Knob, output level
	1015250	2-ganged Volume, 50 kΩ B, output level
9	7296020	Rack-mounting adaptor (set)
	5396340	Rack-mounting adaptor (each)
	5216100	Rear stand (each)
10 S 05	1131440	Push Switch
	5326620	Push Knob
	6906480	Spring, push switch
11 LD701	0319090	LED, sterec indicator
12	5006680	Bonnet
	5109246	B Type Screw M4 x 16

Parts No.	Stock No.	Description
13	4301140	Tune Meter
14	5416461	Dial Pointer
	5517260	Dial Pointer Sheet
15	4301130	Signal Meter
16	5408370	Dial Scale
17	7007860	Front Panel Ass'y
	5301500	Front Panel
	5326620	Push Knob
	6906480	Spring, push knob
	5305271	Window, dial scale

2. Top View

Parts List

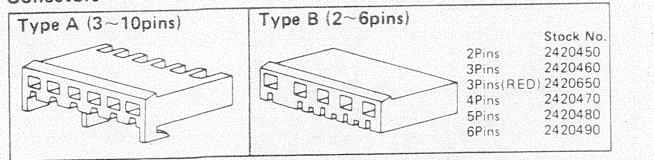
Parts No.	Stock No.	Description
1	3800010, 4	Power Cord
	3910600	Strain Relief
2	2410091	Voltage Selector, plug
	2410830	Voltage Selector, socket
3 C 702	0659802	0.0047 μF 150V C.C.
	5616220	Capacitor Cover
4	4002430	Power Transformer
5	5037530	Blue Filter

Parts No.	Stock No.	Description
6 C 701	0659801	0.01 μF 150V C.C.
	5616220	Capacitor Cover
7	7726130	Illumination Unit Ass'y 8V, 0.3A
8	7136090	Tension Unit
9	6146721	Pulley
10	5286450	Antenna Holder
11	2210310	Antenna Terminal Board
12 L 702	4200850	Bar Antenna

Parts No.	Stock No.	Description
13 R 701	0200122	1.2 kΩ ½W N.I.R.
14	5286480	Antenna Holder (B)
15	2200300	2 Pin Input Terminal
16 F 701	0432210	0.5A 250V AC Fuse, 220V/240V
	0432220	1A 250V AC Fuse, 100V/120V
	2300060	Fuse Holder

- Figures

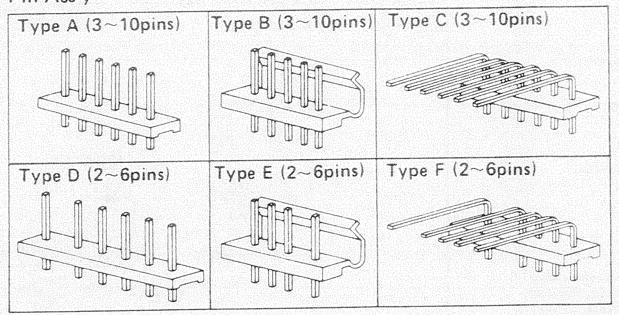
Conectors


Type A (3~10pins)
Type B (2~6pins)

	Stock No.
2Pins	2420450
3Pins	2420460
3Pins(RED)	2420650
4Pins	2420470
5Pins	2420480
6Pins	2420490

NOTE: Since stock number of famale connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector.

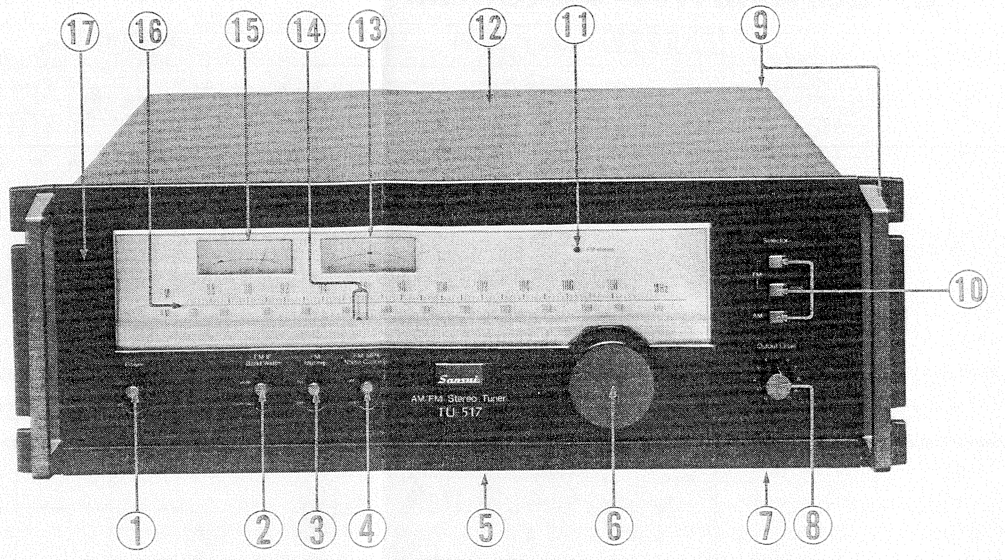
Pin Ass'y


Type A (3~10pins)
Type B (3~10pins)
Type C (3~10pins)
Type D (2~6pins)
Type E (2~6pins)
Type F (2~6pins)

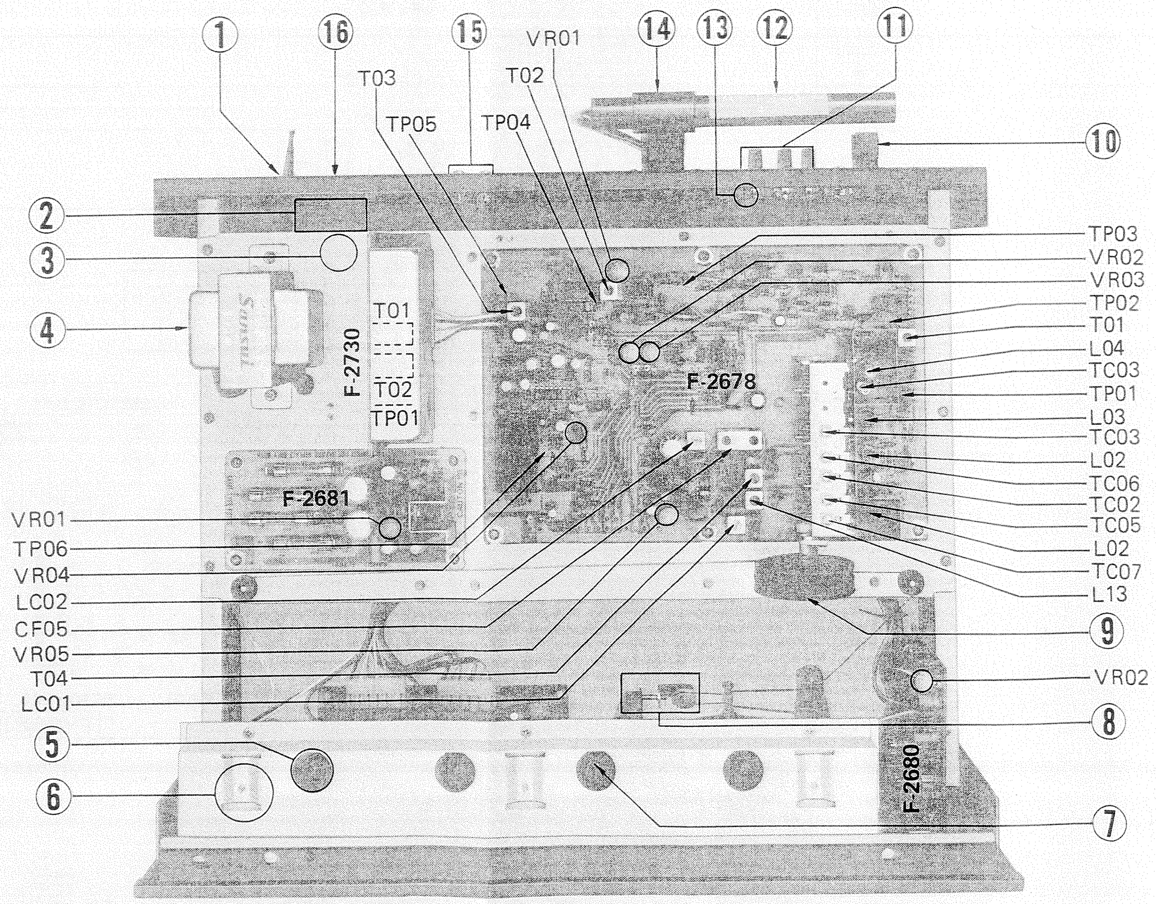
- Abbreviations

C.R.	: Carbon Resistor	E.C.	: Electrolytic Capacitor
S.R.	: Solid Resistor	BP.E.C.	: Bi-Polar Electrolytic Capacitor
Ce.R.	: Cement Resistor	C.C.	: Ceramic Capacitor
M.R.	: Metal Film Resistor	Mi.C.	: Mica Capacitor
F.R.	: Fusing Resistor	O.C.	: Oil Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C.	: Polystyrene Capacitor
M.C.	: Mylar Capacitor	E.C.	: Tantalum Capacitor

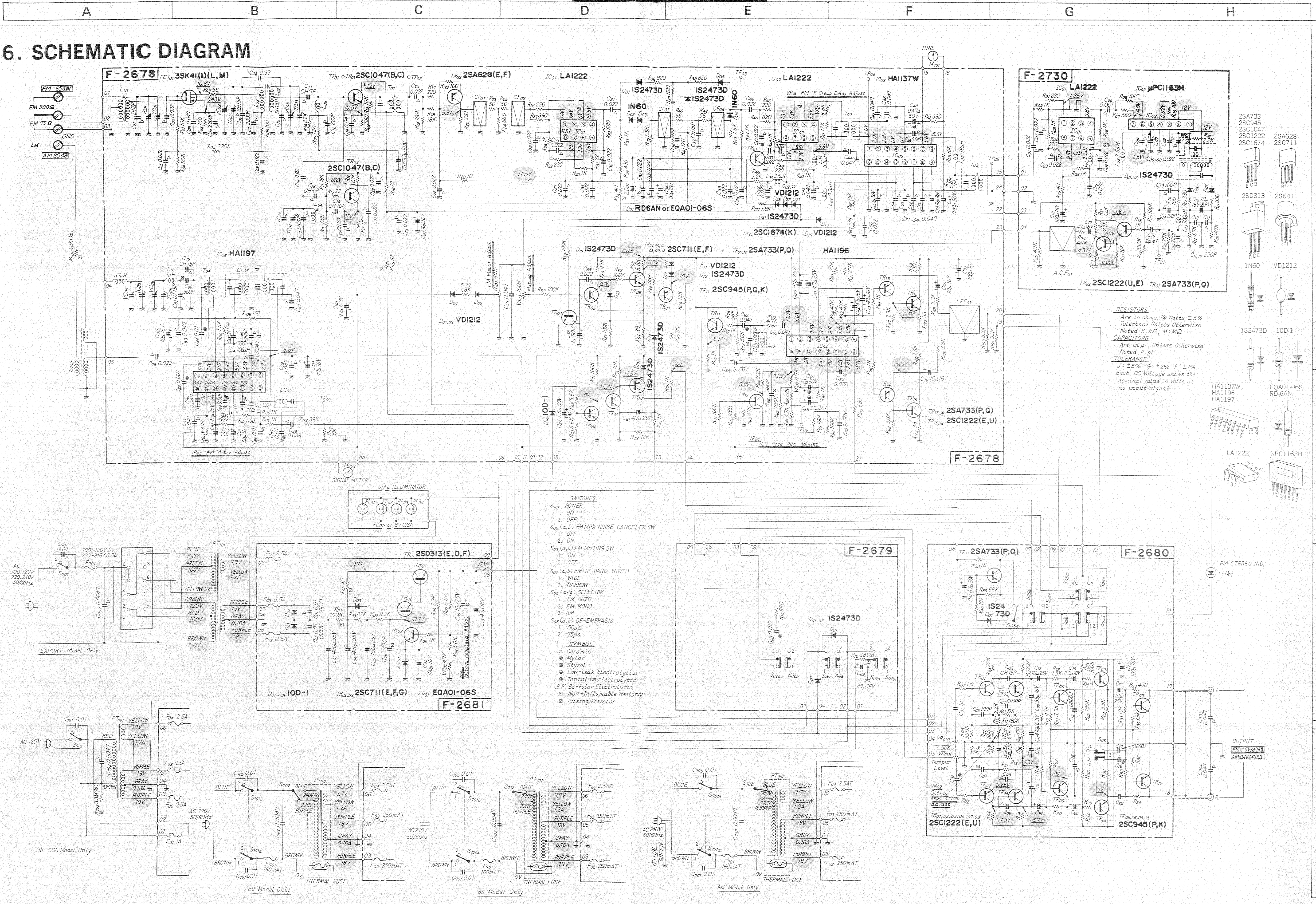
<Front View>


⑰
⑯
⑮
⑭
⑬
⑫
⑪
⑨
⑩
①
②
③
④
⑤
⑥
⑦
⑧

<Top View>


①
⑯
⑮
VR01
⑭
⑬
⑫
⑪
T03
T02
TP05
TP04
⑩
②
③
④
T01
F-2730
T02
TP01
F-2678
F-2681
F-2680
TP03
VR02
VR03
TP02
T01
L04
TC03
TP01
L03
TC03
L02
TC06
TC02
TC05
L02
TC07
L13
⑨
VR02
⑧
⑦
VR01
TP06
VR04
LC02
CF05
VR05
T04
LC01
⑤
⑥

6. SCHEMATIC DIAGRAM


A
B
C
D
E
F
G
H
1
2
3
4
5
F-2678
F-2730
F-2679
F-2680
F-2681
FM 65dBf
FM 300Ω
FM 75Ω
GND
AM
AM 90dB
FET01 3SK41(1)(L,M)
TR01 2SC1047(B,C)
TR02 2SC1047(B,C)
TR03 2SA628(E,F)
IC01 LA1222
IC02 LA1222
IC03 HA1137W
IC05 HA1197
HA1196
IS2473D
IN60
VD1212
RD6AN or EQA01-06S
TR21 2SC1674(K)
TR04,05,06,08,09,10,12 2SC711(E,F)
TR07,10 2SA733(P,Q)
TR11 2SC945(P,Q,K)
TR13,14 2SA733(P,Q)
TR15,16 2SC1222(E,U)
10D-1
D07,09 VD1212
FM Meter Adjust
Muting Adjust
VR05 AM Meter Adjust
VR06 VCO Free Run Adjust
VR01 FM IF Group Delay Adjust
TUNE
M701
M702
SIGNAL METER
DIAL ILLUMINATOR
PL01~04 8V 0.3A
LPF01
IC01 LA1222
IC02 µPC1163H
D01,02 IS2473D
A.C.F01
TR02 2SC1222(U,E) TR01 2SA733(P,Q)
C11,12 220P
TP01
AC 100,120V 220,240V 50/60Hz
S701
C701 0.01
100~120V 1A 220~240V 0.5A
F701
PT701
BLUE 120V
GREEN 100V
YELLOW 0V
ORANGE 120V
RED 100V
BROWN 0V
YELLOW 7.7V
YELLOW 1.2A
PURPLE 19V
GRAY 0.76A
PURPLE 19V
F04 2.5A
F03 0.5A
F02 0.5A
EXPORT Model Only
TR01 2SD313(E,D,F)
D01~03 10D-1
TR02,03 2SC711(E,F,G)
ZD01 EQA01-06S
Voltage Regulator Adjust
D01,02 IS2473D
TR11 2SA733(P,Q)
IS2473D
FM STEREO IND
LED01
VR02 Stereo Separation Adjust
Output Level
TR01,02,03,04,07,08 2SC1222(E,U)
TR05,06,09,10 2SC945(P,K)
OUTPUT
FM 1.0V/47KΩ
AM 0.4V/47KΩ
L
R
AC 120V
UL CSA Model Only
AC 220V 50/60Hz
EU Model Only
AC 240V 50/60Hz
BS Model Only
THERMAL FUSE
AS Model Only
F701 160mAT
F04 2.5AT
F03 250mAT
F03 350mAT
F02 250mAT
2SA733
2SC945
2SC1047
2SC1222
2SC1674
2SA628
2SC711
2SD313
2SK41
1N60
VD1212
1S2473D
10D-1
HA1137W
HA1196
HA1197
EQA01-06S
RD-6AN
LA1222
µPC1163H

SWITCHES
S701 POWER
1. ON
2. OFF
S02 (a,b) FM MPX NOISE CANCELER SW
1. OFF
2. ON
S03 (a,b) FM MUTING SW
1. ON
2. OFF
S04 (a,b) FM IF BAND WIDTH
1. WIDE
2. NARROW
S05 (a~g) SELECTOR
1. FM AUTO
2. FM MONO
3. AM
S06 (a,b) DE-EMPHASIS
1. 50µs
2. 75µs

SYMBOL
△ Ceramic
◎ Mylar
⊠ Styrol
◒ Low-Leak Electrolytic
⊗ Tantalum Electrolytic
(B.P) Bi-Polar Electrolytic
⊡ Non-Inflamable Resistor
⧄ Fusing Resistor

RESISTORS
Are in ohms, ¼ Watts ±5% Tolerance Unless Otherwise Noted K:kΩ, M:MΩ

CAPACITORS
Are in µF, Unless Otherwise Noted P:pF

TOLERANCE
J: ±5% G: ±2% F: ±1%

Each DC Voltage shows the nominal value in volts at no input signal

7. THREADING OF DIAL CORD

- If a dial cord is cut off or slips, replace it by following procedures.
  As this unit uses 0.5 mmφ cord, please replace it with the same type certainly.
- The length of dial cord is approximately 170 cm (66.9 inch).

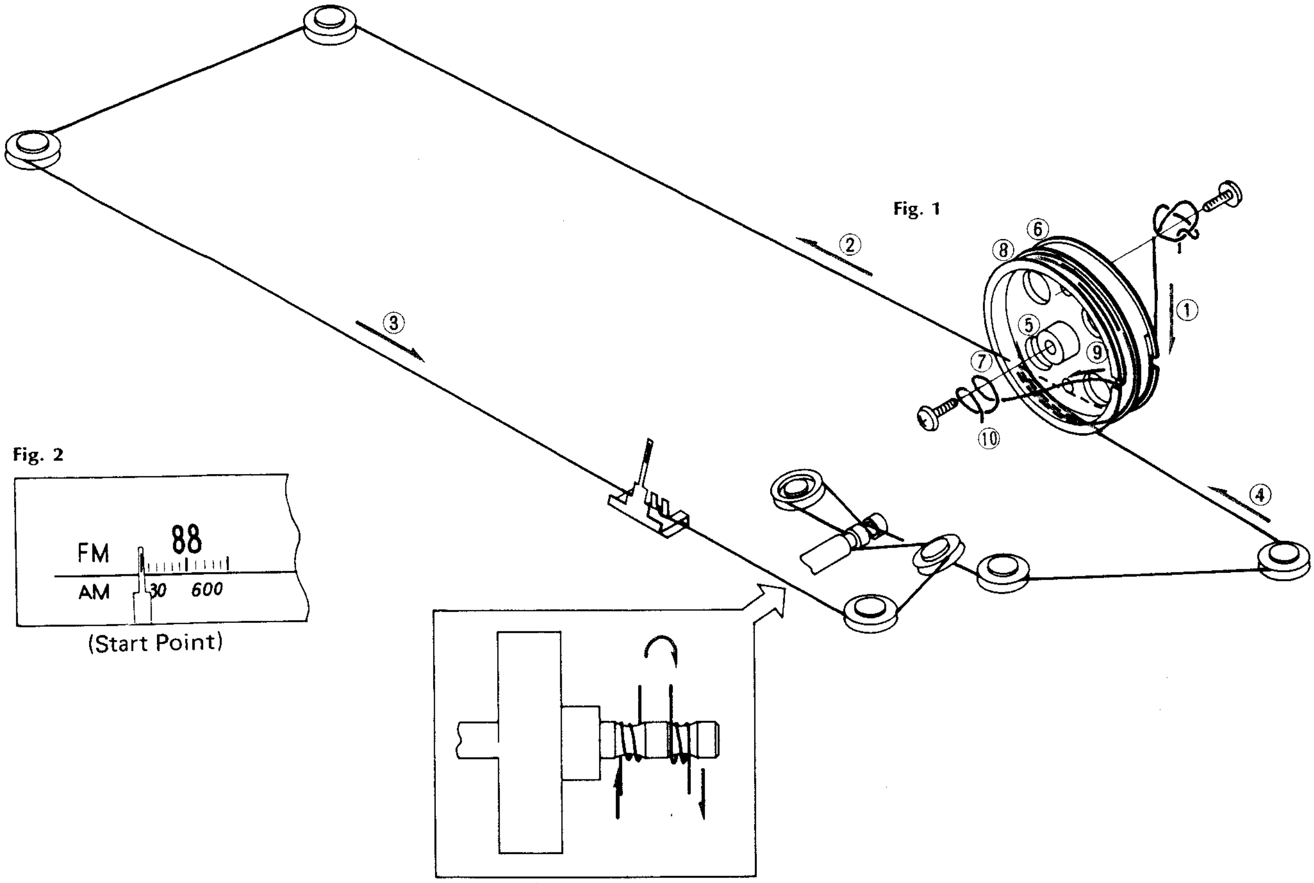


Fig. 1

Fig. 2

(Start Point)

1. Threading of Dial Cord

Thread the dial cord in numerical order from 1 to 10 as Fig. 1.

- Open the variable capacitor completely.

Stock No.	Description
6036050	Dial Cord (0.5 mm φ)
6146721	Dial pulley

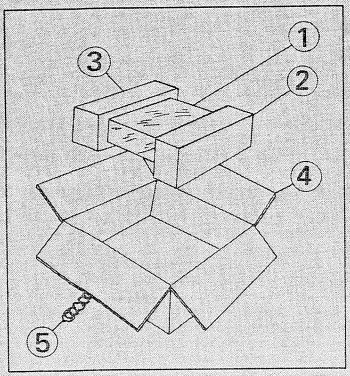
2. Attachment of Dial Pointer

(1) Close the variable capacitor completely.
(2) Set the dial pointer to the line at most left on dial scale as Fig. 2.

- Confirm that the dial pointer runs smoothly on the dial scale by turning the tuning shaft.

8. PACKING LIST

Parts No.	Stock No.	Description
1	9116670	Vinyl Cover
2	9028021	Stylofoam Packing (L)
3	9028031	Stylofoam Packing (R)
4	9000500	Carton Case
5	5996080	Curl Stopper



9. ACCESSORY PARTS LIST

Stock No.	Description
9203780	Operating Instructions
5192082	Hexagon Wrench (1.5 mm)
9237770	Schematic Diagram
7296020	Rack-mounting Adaptor (set)
5396340	Rack-mounting Adaptor (each)
5216100	Rear Stand (each)
3820100	FM Antenna
3810280	Pin Plug Cord

MEMO